Salt Watershed

Watershed Description

This watershed is composed of the Salt River drainage from its headwaters to Granite Reef Dam, excluding the Verde River drainage. This watershed can be divided into four very distinct sub-basins: White River, Black River, Tonto Creek, and the main stem Salt River.

The population of this 6,242 square mile watershed is approximately 40,500 people (2000 census), with most of this population in the Superior-Globe-Miami mining district. Land ownership is approximately: 49% Tribal, 48% federal, 2% private, and 1% state. The principal land uses are open range grazing, recreation, forestry, and mining. Nine wilderness areas have been set aside, which have restricted land uses and activities.

Elevations range from 10,600 feet (above sea level) in the White Mountains, to about 2,000 feet at Granite Reef Dam. The watershed above Roosevelt Lake (White River, Black River, and Tonto Creek) is above 5,000 feet elevation with high desert flora and fauna, and coldwater aquatic communities where perennial waters exist. The area below Roosevelt Lake is below 5,000 feet, and therefore, contains primarily warmwater aquatic communities.

Water Resources

This Watershed receives more precipitation than most of the state, with approximately 20 inches of rain and 20 inches of snowfall. Roosevelt Lake and a chain of other reservoirs (Apache, Canyon, and Saguaro) were constructed to store perennial flow from this watershed and provide much of the water used in the Phoenix metropolitan area.

An estimate of surface water resources in the Salt Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

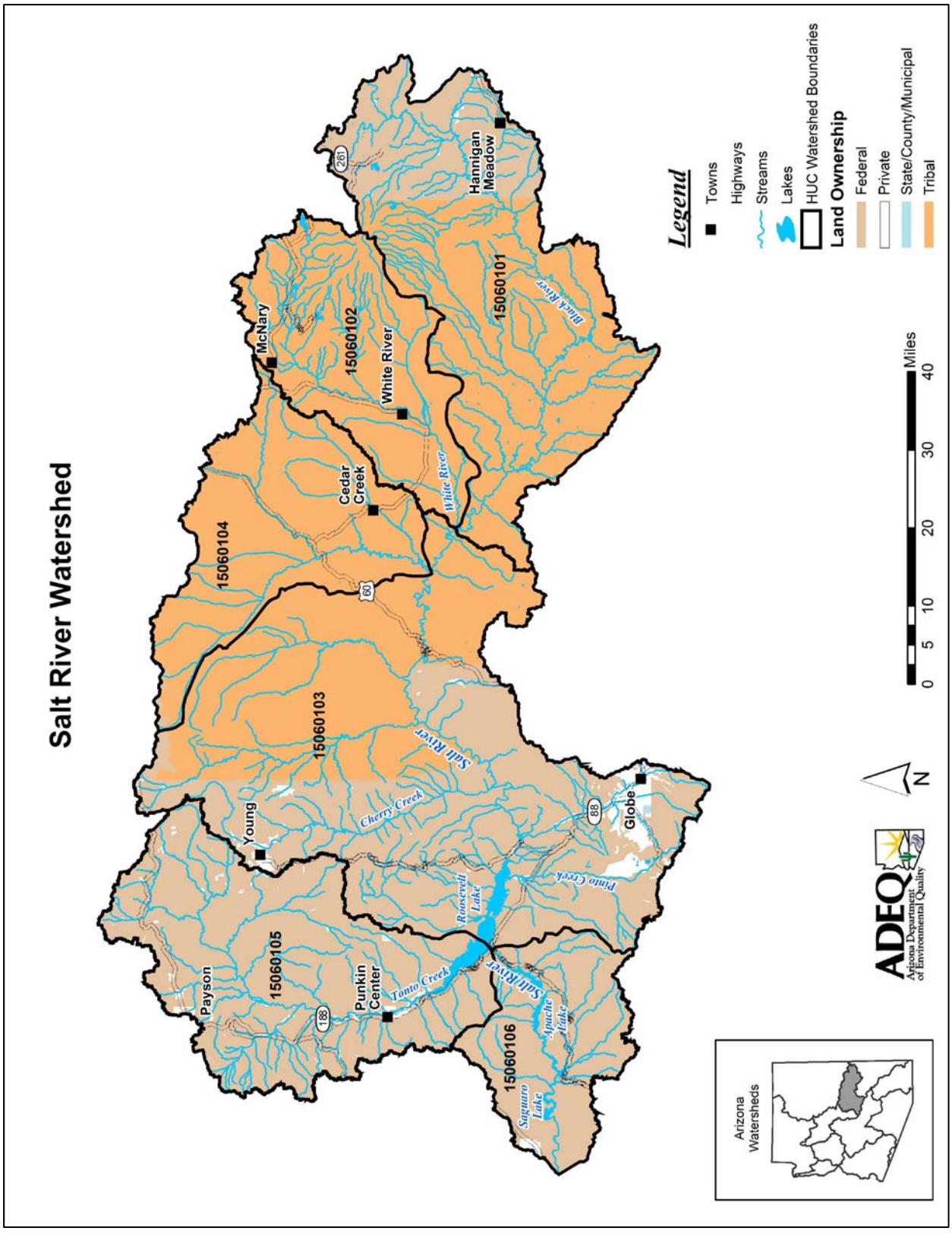
Estimated Surface Water Resources in the Salt Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	510	1,190	2,785
	Perennial	Non-perennial	
Lake acres	25,544	0	

On Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles On Tribal Lands	825	0	4,275
	Perennial	Non-perennial	
Lake acres On Tribal Lands	1,858	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.


Salt River Watershed
Legend
Towns
Highways
Streams
Lakes
HUC Watershed Boundaries
Land Ownership
Federal
Private
State/County/Municipal
Tribal
0 5 10 20 30 40
Miles
N
ADEQ
Arizona Department of Environmental Quality
Arizona Watersheds
15060101
15060102
15060103
15060104
15060105
15060106
Hannigan Meadow
McNary
White River
Cedar Creek
Young
Payson
Punkin Center
Globe
Black River
White River
Salt River
Cherry Creek
Tonto Creek
Roosevelt Lake
Pinto Creek
Apache Lake
Saguaro Lake
261
60
88
188

Watershed Partnerships

- The Friends of Pinto Creek
  This group is dedicated to the preservation of Pinto Creek and its tributaries, which flow through the copper mining area near Globe. They are dedicated to the preservation of Pinto Creek, Powers Gulch and Haunted Canyon. This group meets as needed. Contact Tom Sonandres at (623) 583-6764 or pintocreek@asu.edu for more information.

- Northern Gila County Water Planning Alliance
  The watershed of interest is bounded by Mogollon Rim to the north, Roosevelt Lake to the south, Sierra Ancha Mountains to the east, and Mazatzal Mountains to the west. The alliance was formed to develop water strategies for the area around Payson, Pine, and Strawberry (a.k.a. Tonto Creek Basin). This group meets as needed. Contact Steve Besich, Assistant County Gila Manager at sbesich@co.gila.za.us; Lionel Martinez, rim Trail Water Improvement District at (928) 474-2029; or Howard Matthews, pine-Strawberry Water Improvement District at (928) 476-2142.

Special Studies and Water Quality Improvement Projects

Total Maximum Daily Load Analyses – The following TMDL analyses have been completed, are ongoing, or are scheduled to be completed in this watershed. Further information about the status of these investigations or a copy of the TMDL, if completed, can be obtained at ADEQ's website: www.azdeq.gov.

- Canyon Lake is impaired by low dissolved oxygen.
  Low dissolved oxygen is generally associated with nutrient loading and eutrophic conditions which can lead to algal blooms and even fish kills. A TMDL is to be initiated in 2010 to determine the cause and controllable sources of the low dissolved oxygen and recommend strategies to meet surface water quality standards.

- Crescent Lake is impaired due to high pH (alkalinity).
  High pH readings are also frequently associated with nutrient loading (see Canyon Creek comments). High pH values may represent concerns for most designated uses, but pose the biggest risk to aquatic life.

- Christopher Creek and Tonto Creek, above Haigler Creek confluence, are impaired by bacteria *Escherichia coli*) contamination.
  Bacteria contamination may pose a risk to humans swimming or even wading in the water. A bacteria TMDL was completed in 2004 for both Christopher Creek and Tonto Creek. Septic and waste disposal systems were identified as the primary source of bacterial loading. The TMDL recommended inspection, repair, and upgrading of these systems, and improving facilities at heavily used recreational sites. The U.S. Forest Service and Gila County Health Department were encouraged to initiate routine bacterial monitoring.

- Tonto Creek, above Haigler Creek confluence, is also impaired by nitrogen (nutrients).
  Excess nitrogen can lead to eutrophic conditions and algal blooms. A nitrogen TMDL was approved in 2005. Three sources of excess nutrients were identified: septic systems, insufficient restroom facilities at recreational sites along Tonto Creek, and the Tonto Creek Fish Hatchery. ADEQ will work with the Arizona Game and Fish Department to determine new permit discharge limits for the hatchery and the means for achieving these limits. Inspection, repair, and upgrading of septic systems, along with improving waste facilities at recreational sites, were also recommended actions so that nutrient standards will be met.

- Pinto Creek is impaired by copper, and the segment of Pinto Creek downstream of Ripper Spring is also impaired by selenium.
  Both copper and selenium concentrations pose a risk to aquatic life and wildlife. Selenium was added on the 2004 Impaired Waters List for the downstream segment of Pinto Creek and a selenium TMDL is scheduled to be initiated in 2009.

The Pinto Creek Phase II TMDL Modeling Report, written by Malcolm Pirnie, Inc. for ADEQ (2006), describes the hydrology and pollutant transport for Pinto Creek basin in support of allocation of copper from discharges to the creek. Natural mineralization in the area has resulted in numerous historic and active mining related disturbances. This model scenario results lead to the following major conclusions:

- Gibson Mine is the single largest source of copper loads to Pinto Creek – over 90% of the copper load. Remediation efforts are necessary at this mining site;
- Remediation at other mining sources is expected to reduce copper;
- Much of upper Pinto Creek would exceed copper criteria even after remediation;
- The Carlotta Copper project (a new mine site being established on Pinto Creek) is not predicted to cause large changes in copper loads or concentrations.

Aggressive remediation activities are being scheduled for the Gibson Mine, an abandoned mine (see Water Quality Improvement Grants below). Site specific standards are also being developed for copper in Pinto Creek because the natural background concentration is higher than the standard in this copper rich mining area.

- The Salt River, from Stewart Mountain Dam (Saguaro Lake) to the Verde River, is impaired by low dissolved oxygen which poses a threat to aquatic life. More data is needed to identify sources and TMDLs have been scheduled to be initiated in 2010.

Water Quality Improvement Grant Projects – ADEQ awarded the following Water Quality Improvement Grants (319 Grants) in this watershed. More information concerning these grants or projects can be obtained at: http://www.azdeq.gov/environ/water/watershed/fin.html.

- **Lower Salt River Pollution Prevention, Education, and Monitoring Project**
  The Tonto National Forest (2000)
  Construct three restrooms in the Salt River Recreational Area and monitor bacteria levels in the segment of stream used for tubing and other recreation.

- **Camp Geronimo Boy Scout Camp On-site Sewer Improvement Project**
  Camp Geronimo Boy Scouts (2002 and 2004)
  Add treatment facilities and provide sealed vault and haul toilet units.

- **Trees for the Rim Project**
  Arizona Community Tree Council (2003)
  Provide trees and other vegetation at no cost to those private property owners whose trees and landscape plants were destroyed during the Rodeo-Chediski fire in 2002. These actions are to help restore vegetation and thereby reduce runoff pollution.

- **Gibson Mine Remediation Project**
  Franciscan Friars of California (2005 and 2006)
  Design, construct, and implement a manmade wetland to reduce copper, beryllium, zinc, and turbidity loadings to Pinto Creek and Mineral Creek.

- **Gila County Septic System Project**
  Gila County Health Department and Community Services (2005 and 2006)
  Identify, repair, upgrade, or replace waste water systems that are structurally unsound or failing in the Christopher Creek and Tonto Creek (headwaters) area. These activities support implementation of the nitrogen and bacteria TMDLs established for these waters.

- **R-Bar-C Boy Scout Camp Sewer Facilities Project**
  Boy Scouts of America – Grand Canyon Council (2006)
  Upgrade septic treatment and disposal facilities to prevent contamination of Christopher Creek.

Water Protection Fund Projects – The following Water Protection Fund Projects were awarded by the Arizona Department of Water Resources. More information about these funds or projects can be obtained from the ADWR web site at: http//www.azwater.gov.

- **Canyon Creek Riparian Restoration Project**
  Arizona Game and Fish Department (2005)
  Temporarily exclude grazing (5 to 10 years) from a half-mile reach of Canyon Creek. The goal of the exclosure is to improve water quality and restore native habitat.

Other Water Quality Studies

- ***Lower Verde / Lower Salt River Management Plan and Restoration Strategy***
  Lower Verde / Lower Salt River Watershed Advisory Group (2000)
  This plan identifies the areas of greatest concern for water resources, initiates pollution source identification, and identifies programs and potential actions to remediate these sources.

- ***Phoenix Metropolitan Reservoir Study***
  David Walker, University of Arizona
  This is an ongoing and comprehensive study of water quality in reservoirs serving the Phoenix metropolitan area. Goal is to collect and analyze data to answer water quality management questions in a proactive manner. A yearly report is produced. In 2005, the report provided information about:
  - Climate and drought effects on water quality,
  - Wildfire effects on water quality,
  - Harmful algal blooms,
  - Atmospheric deposition and the use of sediment to look at accumulation of pollutants, and
  - Endocrine disruption compounds.

- ***Characterization of Hydraulic Conductivity of the Alluvium and Basin Fill, Pinal Creek Basin near Globe, Arizona***
  Cory E. Angeroth – U.S. Geological Survey (2002)
  Mining in the Pinal Creek area has resulted in acidic waters containing elevated concentrations of dissolved metals in the ground water. Slug tests were conducted in 1997 and 1998 to better understand contaminant transport through the regional aquifer (i.e., hydraulic conductivity). The tests showed that in the unconsolidated stream alluvium and in the basin fill, the lower the pH of the ground water, the higher the hydraulic conductivity. Likely, the low pH water is causing the dissolution of aquifer material.

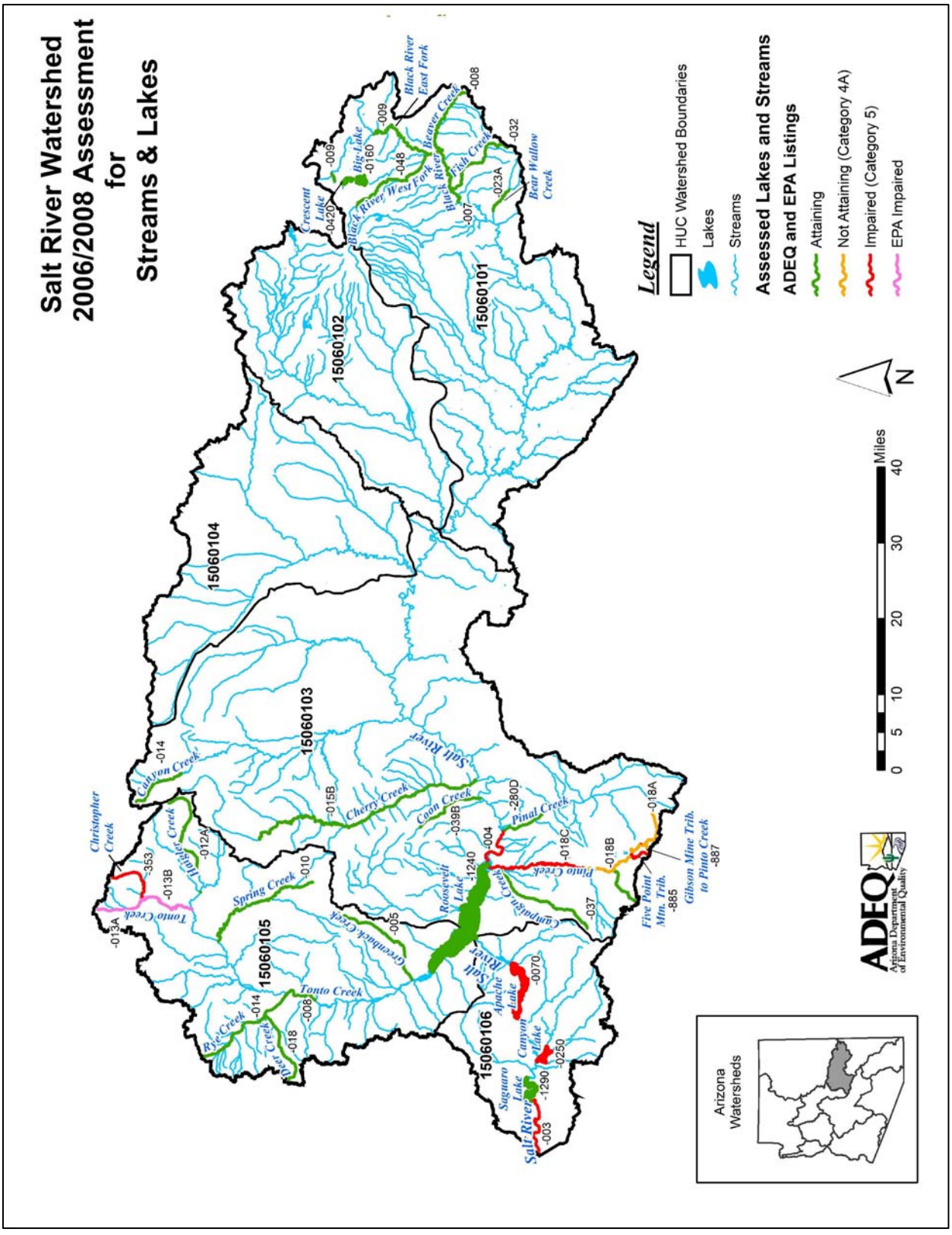
- ***Assessment of Selected Inorganic Constituents in Streams in the Central Arizona Basins Study Area, Arizona and Northern Mexico, through 1998***
  David Anning – U.S. Geological Survey, National Water Quality Assessment Program (2003)
  Inorganic chemical data (dissolved solids, suspended sediment, and nutrients) and stream properties (temperature, pH, dissolved oxygen) were analyzed to assess water quality, determine natural and human factors affecting water quality, and compute stream loads.
  - The total annual input fluxes from quantifiable sources of nitrogen and phosphorus (nutrients) were considerably higher for developed basins than for minimally developed basins (such as the Salt Watershed).
  - For minimally developed basins, precipitation was the largest quantifiable source of nitrogen.
  - The amount of nitrogen and phosphorus transported out of the basins was much smaller than the amount of quantifiable inputs. This indicates that most of the nutrients were not transported out in surface water, but were transported to the subsurface (soil or aquifer), released to the atmosphere (volatilized ammonia), or incorporated into the biomass (plants and animals).

Assessments

The Salt Watershed can be separated into the following drainage areas (subwatersheds):

15060101	Black River
15060102	White River (Tribal land – Not assessed)
15060103	Upper Salt River
15060104	Carrizo Creek (Tribal land – Not assessed)
15060105	Tonto Creek
15060106A	Lower Salt River

These drainage areas and the surface waters assessed as "attaining" or "impaired" are illustrated on the following watershed map. Methods used to complete these assessments are described in the "Surface Water Assessment Methods and Technical Support" document (2006).


Salt River Watershed
2006/2008 Assessment
for
Streams & Lakes
Legend
HUC Watershed Boundaries
Lakes
Streams
Assessed Lakes and Streams
ADEQ and EPA Listings
Attaining
Not Attaining (Category 4A)
Impaired (Category 5)
EPA Impaired
15060101
15060102
15060103
15060104
15060105
15060106
Black River East Fork
Black River West Fork
Beaver Creek
Fish Creek
Bear Wallow Creek
Big Lake
Crescent Lake
Canyon Creek
Cherry Creek
Coon Creek
Pinal Creek
Pinto Creek
Gibson Mine Trib. to Pinto Creek
Five Point Mtn. Trib.
Campaign Creek
Roosevelt Lake
Salt River
Greenback Creek
Spring Creek
Tonto Creek
Rye Creek
Deer Creek
Apache Lake
Canyon Lake
Saguaro Lake
Christopher Creek
Haigler Creek
Tonto Creek
Miles
0 5 10 20 30 40
N
ADEQ
Arizona Department of Environmental Quality
Arizona Watersheds

APACHE LAKE 15060106A-0070 2190 Acres	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Wc – Impaired FBC – Inconclusive FC – Attaining DWS -- Attaining AgI – Attaining AgL – Attaining	Category 5 Impaired	Low dissolved oxygen	Add low dissolved oxygen to the 303(d) List

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/30/2000 – 11/05/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At dam SRAPA-A 100997	ADEQ, AGFD, UA Ambient	9-14 total and 5 dissolved: Cadmium, chromium, copper, lead, nickel, silver, zinc 6-15 total and 0-2 dissolved: Antimony, arsenic, barium, beryllium, boron, manganese, selenium, mercury, and thallium	42-45 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	11 *E. coli* bacteria 11 Fluoride 14 Total dissolved solids 24 Turbidity
At transition zone SRAPA-B 101712	UA Ambient			
In riverine zone SRAPA-C 102139	ADEQ, AGFD, UA Ambient			
At beach SRAPA-BCH 101704	AGFD, UA Ambient			
At camping area SRAPA-BC 101707	AGFD, UA Ambient			
At Burnt Corral SRAPA-COR 102753	ADEQ, AGFD, UA Ambient			
Mid Lake SRAPA-E 100008	ADEQ, AGFD, UA Ambient			
At marina SRAPA-MAR 100998	AGFD Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	SITES 10/30/2000 – 5.1 mg/L – all 09/05/2001 – 2.3 mg/L – C 10/03/2001 – 4.6 mg/L – C 05/30/2001 – 6.2 mg/L – B and C 08/20/2003 – 6.3 mg/L – A 03/10/2004 – 6.4 mg/L – B and C 04/09/2004 – 6.0 mg/L – C 06/01/2004 – 5.1 mg/L – all 11/05/2004 – 2.9 mg/L – all	Impaired – Low dissolved oxygen in the top meter in 16 of 38 samples in the top meter.) (Binomial) Low dissolved oxygen occurred during 9 of 17 monitoring events in the top meter of lake water. (Note: ADEQ has proposed changing the designated use at this lake to A&Ww, which has a dissolved oxygen standard of 6.0 mg/L. This would adjust the number of low dissolved oxygen samples to 8 of 38 samples (5 of 17 sampling events), and it would remain impaired.)

pH (high)	<9.0 SU A&Wc, FBC, DWS, AgI, AgL	08/06/2001 – 9.2 SU 03/07/2003 – 9.4-9.8 SU	Attaining – pH exceeded standards in 2 of 15 sampling events. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Need composite nitrogen and phosphorus samples to assess A&Wc and FBC		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria in at least 7 samples.
DISCUSSION OF SITE SPECIFIC NUTRIENT STANDARDS		Nitrogen and phosphorus standards established for this lake are based on composite samples collected at the surface, 2 meter, and 5 meter depths. No composite samples were collected and analyzed during this assessment period. This standard is to be replaced by the proposed lake narrative nutrient implementation procedures currently being adopted through the Triennial Review process. The nitrogen criterion (1.0 mg/L) was exceeded in 12 of 42 samples collected. However, since these were not composite samples, the standards did not apply.	
MONITORING RECOMMENDATIONS		High Priority –Collect more dissolved oxygen samples to support a TMDL. Low dissolved oxygen and high pH may be symptoms of excess nutrient loading. New methods for implementing the narrative nutrient standard should be applied to this lake once adopted, to determine whether narrative nutrient violations are occurring based on the dissolved oxygen and pH violation, and elevated nutrients. Use lower lab detection limits for selenium and dissolved mercury.	

BEAR WALLOW CREEK From North and South Forks of Bear Wallow to Indian Reservation boundary 15060101 – 023A 5.9 Miles Unique Water	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Inconclusive FC – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/24/2001 – 08/15/2002 NUMBER AND TYPES OF SAMPLES Metals	Nutrients – Related	Other
Below South Fork Bear Wallow Creek SRBWL005.79 101198	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 3 total and 0-1 dissolved: Boron, lead, manganese, mercury 1 total and 1 dissolved: barium, nickel, silver, and thallium	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	2 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient *E. coli* bacteria samples to assess FBC		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority – Collect *E. coli* bacteria samples to represent at least 3 seasons during the assessment period. Use lower lab detection limits for selenium and dissolved mercury.	

BEAVER CREEK From headwaters to Black River 15060101 -- 008 13.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/24/2001 – 10/26/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Forest Road #26 SRBEV012.04 102145	ADEQ Special study	3 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, copper, zinc 3 total and 0-1 dissolved: Boron, lead, manganese, mercury 1 total and 1 dissolved: barium, nickel, silver, and thallium	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen 7 Phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 3 Fluoride 7 Total dissolved solids 22 Suspended sediment concentration 22 Turbidity
Above Hannagan Creek SRBEV009.66 102140	ADEQ Special study			
Below Hannagan Creek SRBEV009.56 102139	ADEQ Special study			
Above Forest Road 26 bridge SRBEV007.28 102135	ADEQ Special study			
At USGS Gage near Sprucedale SRBEV001.40 100373	ADEQ Ambient and Special study			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	08/13/2002 – 6.74 mg/L 08/28/2003 – 5.56 mg/L	Inconclusive – On 08/13/2002 low dissolved oxygen was naturally occurring due to low flow (flow as 0.13) due to ground water upwelling. Nitrogen was 0.37, phosphorus = 0.18. Other date was during flood flow at 9 cfs, with phosphorus reading at 13 mg/L. (Binomial)
Phosphorus	0.8 mg/L Single sample maximum A&Wc, FBC	08/27/2003 – 13 mg/L	Inconclusive – Only 1 exceedance in 7 samples. (Binomial)
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Wc	08/27/2003 – 4865 mg/L	Attaining – SSC criteria of 80 mg/L was exceeded once in 22 sampling events. Because the sample was collected during flood flows of 9-10 cfs, the value could not be included in the geometric mean calculation. The geometric mean standard was not exceeded. However, the high sediment concentration suggests that sediment may be a problem in this watershed.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
Phosphorus and dissolved oxygen	**Core parameters collected.**		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Medium Priority –Collect more phosphorus and dissolved oxygen samples due to exceedances. Use lower lab detection limits for selenium and dissolved mercury. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted, due to high levels of suspended sediment during flood flows. Note that the old turbidity standard (10 NTU) was exceeded during 8 of 22 sampling events.	

BIG LAKE 15060101 -- 0160 440 Acres	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Attaining DWS – Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/15/2001 – 06/12/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At dam SRBIG-A 101322	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, barium, boron, beryllium, chromium, selenium, zinc 3 total and 0-1 dissolved: Cadmium, copper, lead, silver, manganese, mercury	3-4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	2 *E. coli* bacteria 3 Fluoride 4 Total dissolved solids 3 Turbidity
Mid lake SRBIG-B 101355	ADEQ Ambient			
At boat dock SRBIG-D 100013	ADEQ Ambient			
Shoreline SRBIG-SH 101358	ADEQ Ambient			
West of floating dock SRBIG-SBR 101359	ADEQ Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient *E. coli* bacteria and dissolved cadmium and dissolved copper to assess FBC and A&Wc		Lab detection limits for dissolved metals (cadmium copper, lead, mercury, and silver) were higher than the A&W chronic criteria in at least 1 sample.
MONITORING RECOMMENDATIONS		Low Priority –Collect missing core parameters to represent at least 3 seasons during the assessment period. Use lower lab detection limits for dissolved metals.	

BLACK RIVER From Beaver Creek to Reservation Creek 15060101 – 007 13.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Inconclusive FC – Attaining DWS – Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/25/2001 – 08/14/2002 NUMBER AND TYPES OF SAMPLES Metals	Nutrients – Related	Other
Above Forest Road #25 SRBLR102.24 101202	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 3 total 0-1 dissolved: Boron, manganese, lead, mercury 1 total, 1 dissolved Barium, nickel, silver, thallium	3 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	2 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Suspended sediment concentration 4 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient *E. coli* bacteria sample to assess FBC		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority – Collect *E. coli* bacteria samples to represent at least 3 seasons during the assessment period. Use lower lab detection limits for selenium and dissolved mercury	

CAMPAIGN CREEK From headwaters to Pinto Creek 15060103 -- 037 16.6 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Attaining FC – Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/27/2001 – 09/11/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Superstition Wilderness Boundary SRCGN009.78 100431	ADEQ Ambient	4 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 4 total metals only: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 4 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use lower lab detection limits for selenium.	

CANYON CREEK From headwaters to White Mountain Apache Reservation 15060103 -- 014 8.6 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Attaining FC – Attaining DWS – Attaining AgI -- Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 12/18/2001 – 09/06/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below OW Ranch Road SRCYN046.07 100370	ADEQ Ambient	4 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 4 total metals only: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 4 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

CANYON LAKE 15060106A -- 0250 450 Acres	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Wc – Impaired FBC – Inconclusive FC – Attaining DWS -- Attaining AgI – Attaining AgL – Attaining	Category 5 Impaired	Low dissolved oxygen	Added low dissolved oxygen to 303(d) List in 2004

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 07/11/2001 – 10/20/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At dam SRCAN-A 101697	ADEQ, AGFD, UA Ambient	7-11 total and 7 dissolved: Cadmium, chromium, copper, lead, nickel, silver, zinc 7 total and 0-2 dissolved: Antimony, arsenic, barium, beryllium, boron, manganese, selenium, mercury, thallium	28-30 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	8 *E. coli* bacteria 16 Fluoride 6 Total dissolved solids 11 Turbidity
At transition zone SRCAN-B 101699	ADEQ, UA Ambient			
Inflow below Horse Mesa Dam SRAPA-1 102538	AGFD Ambient			
Canyon area SRCAN-CAN 102754	AGFD Ambient			
At campground SRCAN-CG1 101700	ADEQ, AGFD, UA Ambient			
At marina SRCAN-MAR 101701	UA Ambient			
Upper middle lake SRCAN-MID 102837	AGFD Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	SITES 10/15/2001 – 6.1 mg/L – A and 1 10/18/2002 – 6.7 mg/L – A 06/04/2003 – 4.5 mg/L – A and B 10/15/2003 – 4.4 mg/L – A 01/08/2004 – 5.0 mg/L – A and B 10/20/2004 – 4.2 mg/L – A and B	Impaired – Low dissolved oxygen in 10 of 23 samples in the top meter. (Binomial) Low DO during 6 of 12 sampling events. (Note: ADEQ has proposed changing the designated use at this lake to A&Ww, which has a dissolved oxygen standard of 6.0 mg/L. This would adjust the number of low dissolved oxygen samples to 5 of 23 samples (4 of 12 sampling events), and it would remain impaired.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Need composite nitrogen and phosphorus samples to assess A&Wc and FBC		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria in at least 2 samples.
DISCUSSION OF SITE SPECIFIC NUTRIENT STANDARDS		Nitrogen and phosphorus standards established for this lake are based on composite samples collected at the surface, 2 meter, and 5 meter depths. No composite samples were collected and analyzed during this assessment period. This standard is to be replaced by the proposed lake narrative nutrient implementation procedures currently being adopted through the Triennial Review process. The nitrogen criterion (1.0 mg/L) was exceeded in 4 of 27 samples collected in the top meter. However, since these were not composite samples, the standard did not apply.	
MONITORING RECOMMENDATIONS		High Priority –Collect more dissolved oxygen samples to support a TMDL. Low dissolved oxygen may be a symptom of excess nutrient loading. New methods for implementing the narrative nutrient standard should be applied to this lake once adopted. Use lower lab detection limits for selenium and dissolved mercury.	

CHERRY CREEK From tributary at 340509 / 110 56004 to Salt River 15060103 -- 015B 40.9 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Attaining FC – Attaining AgI -- Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/27/2001 – 09/10/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above road crossing SRCHE032.78 101323	ADEQ Ambient	8 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 8 total metals only: Boron, lead, manganese, mercury	8 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	7 *E. coli* bacteria 8 Fluoride 8 Total dissolved solids 8 Turbidity
Half-mile above Leisure Canyon SRCHE004.32	ADEQ Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

CHRISTOPHER CREEK From headwaters to Tonto Creek 15060105 – 353 8.0 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Wc – Impaired FBC – Impaired FC – Attaining AgI – Attaining AgL – Attaining	Category 4A (*E. coli*) Not attaining Category 5 (phosphorus) Impaired	*E. coli* bacteria and phosphorus	Add phosphorus. *E. coli* TMDL was approved in 2005. Implementing strategies to reduce loadings.

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 05/23/2000 – 10/25/2003 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above recreation area SRCRS006.20 101027	ADEQ TMDL	3-4 total and dissolved metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 3-4 total metals only: Barium, boron, lead, manganese, mercury 1 total metals only: Nickel, silver, and thallium	95-102 samples: Total nitrogen, total phosphorus, total Kjeldahl nitrogen, dissolved oxygen, pH 4 samples: Ammonia	68 *E. coli* bacteria 4 Fluoride 3 Total dissolved solids 163 Suspended sediment concentration 72 Turbidity
Below recreation area SRCRS005.68 101028	ADEQ TMDL			
Above Highway 260 at Christopher Creek, AZ SRCRS004.43 100362	ADEQ TMDL			
Below Christopher Creek, AZ SRCRS002.97 101030	ADEQ TMDL			
Above Christopher Creek Campground SRCRS002.82 100364	ADEQ TMDL			
Below Christopher Creek Campground SRCRS002.25 100365	ADEQ TMDL			
At top of Box Canyon SRCRS001.24 101033	ADEQ TMDL			
Below Box Canyon SRCRS000.34 100367	ADEQ Ambient			
Above Tonto Creek SRCRS000.08 101034	ADEQ TMDL			

EXCEEDANCES			
POLLUTANT	**STANDARD UNIT DESIGNATED USES**	**DATES EXCEEDANCES**	**DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS**
Dissolved oxygen	7.0 mg/L A&Wc	05/24/2000 – 6.7 mg/L 09/05/2000 – 6.7 mg/L 05/08/2002 – 6.7 mg/L 06/10/2002 – 6.5 mg/L 07/24/2002 – 6.6 mg/L 07/23/2003 – 6.6 mg/L 08/20/2003 – 6.5 mg/L	Attaining –Low dissolved oxygen normally solely due to natural conditions of low flow and ground water upwelling. (Low flows between 0.03 – 0.5 cfs.) Lowest dissolved oxygen measurement was 6.5 mg/L, which is marginally below the standard.
E. coli bacteria	235 CFU/100 ml FBC	09/02/2000 – 689 CFU/100 ml 10/31/2000 – 479 CFU/100 ml 07/22/2003 – 1120 CFU/100 ml 08/20/2003 -- >2419 CFU/100 ml 10/08/2003 – 345 CFU/100 ml	Remains impaired – Exceeded criterion on 5 sampling events during the assessment period. Three exceedances in 2003. Exceedance on one date was associated with flood flows (20 cfs). Exceedances on two other dates were occurred during elevated flows (2-6 cfs).
Phosphorus	0.8 mg/L – Single sample max (SSM) 0.10 mg/L – Annual mean A&Wc and FBC	08/20/2003 – 3.5 mg/L (SSM) 2000 – 0.13 (annual mean) 2003 – 0.44 mg/L (annual mean)	Impaired – Annual mean was exceeded 2 different sites in 2003 and one site in 2000. Single sample maximum (1 mg/L) was exceeded only in 1 of 35 samples (binomial).
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Wc	08/06/2003 – 1603 mg/L 08/20/2003 – 702 mg/L 10/08/2003 – 92 mg/L	Attaining – 3 of 13 sampling events exceeded the 80 mg/L criterion. 1 exceedance occurred during elevated flows (702 mg/L at 5.6 cfs), so was not included in the geometric mean calculation. Using the remaining data, the geometric mean was <u>not</u> exceeded. Note that the old turbidity standard (10 NTU) was also exceeded during 9 sampling events.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Collected all core parameters		Lab detection limit for selenium was higher than A&Wc chronic criteria.
MONITORING RECOMMENDATIONS	Medium Priority –Actions to *E. coli* bacteria loadings will also reduce phosphorus loadings; therefore, development of a phosphorus TMDL is a low priority. Collect additional phosphorus and *E. coli* bacteria data to determine effectiveness of TMDL strategies being implemented. Use a lower lab detection limit for selenium. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted.		

COON CREEK From tributary at 334642 / 1105425 to Salt River 15060103 -- 039B 10.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Attaining FC – Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/27/2001 – 09/10/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Forest Road #203 SRCOO001.92 100379	ADEQ Ambient	4 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 4 total metals only: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	4 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 4 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

COTTONWOOD GULCH From headwaters to Pinto Creek 15060103 – 891 1.9 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIODS: 01/10/2000 – 07/16/2002; 04/05/2005		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below Outfall PV004 SRCTG000.39 103443	BHP Permit	9-19 dissolved and total metals: Arsenic, beryllium, cadmium, copper, magnesium, selenium, and zinc.	9 samples: Dissolved oxygen 19 samples: pH	9 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Dissolved lead needed to assess attainment of A&We.		
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period.	

CRESCENT LAKE 15060101 -- 0420 155 Acres	USE SUPPORT		OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A D E Q	A&Wc – Inconclusive FBC – Inconclusive FC – Attaining AgI – Inconclusive AgL – Inconclusive	Category 2 Attaining Some Uses		
	E P A	A&Wc – Impaired FBC – Impaired AgI – Impaired AgL – Impaired	Category 5 Impaired	High pH	EPA listed lake due to high pH in 2002

Light blue highlights indicate EPA impairments based on EPA assessment and listing criteria. This listing may change when EPA reviews and approves the 2006/2008 impaired waters list. Such listings do not satisfy requirements established in ADEQ's Impaired Water Identification Rule; therefore, they are not included in the list of ADEQ's Impaired waters (Appendix B and Appendix C).

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/14/2001 – 06/12/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Mid lake SRCRE-B 100993	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, barium, boron, beryllium, chromium, manganese, nickel, silver, selenium, zinc 3 total and 0-2 dissolved: Cadmium, copper, lead, mercury	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 3 Fluoride 4 Total dissolved solids 2 Turbidity
At boat ramp SRCRE-BR 101320	ADEQ Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
pH	<9.0 SU A&Wc, FBC, AgI, AgL	11/14/2001 – 9.6 SU	Inconclusive – 1 exceedance in 3 samples. (EPA's original listing considered older data.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient dissolved cadmium and dissolved copper to assess A&Wc		Lab detection limits for dissolved metals (cadmium, copper, lead, and mercury) were higher than the A&W chronic criteria in at least 1 sample.
DISCUSSION OF HIGH PH IMPAIRMENT		Evidence of potential impairment: • No newer monitoring data since lake was listed as impaired.	
MONITORING RECOMMENDATIONS		High Priority – Collect pH measurements to support development of a TMDL. High pH may be a symptom of excess nutrient loading. New methods for implementing the narrative nutrient standard should be applied to this lake once adopted, to determine whether narrative nutrient violations are occurring. Collect missing core parameters to represent at least 3 seasons. Use lower lab detection limits for dissolved metals.	

DEER CREEK From headwaters to Rye Creek 15060105 -- 018 11.9 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Attaining FC – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 01/10/2002 – 04/23/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Mazatzal Wilderness Boundary SRD4E005.86 100531	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 3 total metals only: Boron, lead, manganese, mercury	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limits for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

EAST FORK BLACK RIVER From headwaters to Black River 15060101 -- 009 26.7 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Attaining FC – Attaining DWS – Attaining AgI – Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/24/2001 – 11/19/2003 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below the three Black River forks SREFB011.86 101203	ADEQ Special study	8 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, copper, zinc 8 total and 0-2 dissolved: Boron, lead, manganese, mercury 2 total and 2 dissolved: barium, nickel, silver, and thallium	8 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	8 *E. coli* bacteria 8 Fluoride 8 Total dissolved solids 4 Suspended sediment concentration 12 Turbidity
Above old Buffalo Crossing bridge SREFB000.91 100375	ADEQ Special study			
Below Forest Road 24 at USGS gage SREFB000.62 102131	ADEQ Special study			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Core parameters collected.		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use lower lab detection limits for selenium and dissolved mercury.	

ELLIS RANCH TRIBUTARY From headwaters to Pinto Creek 15060103 – 888 1 Mile	USE SUPPORT	OVERALL ASSESSMENT	
	A&We –Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 03/05/2004 – 01/12/2005		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Forest Road #349 SRERT000.48 102647	ADEQ TMDL	27 dissolved and 5 total: Copper 5 total and 5 dissolved: Selenium and zinc 4 pH		
At Forest Road #349 SRERT000.10 102648	ADEQ TMDL			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	5.8 µg/L at 23 mg/L hardness 5.8 µg/L at 23 mg/L hardness 7.5 µg/L at 30 mg/L hardness A&We acute	12/29/2004 – 36 µg/L 01/04/2005 – 67 µg/L 01/12/2005 – 37 µg/L	Inconclusive –Field investigations for the Pinto Creek TMDL have concluded that copper loads are due to a combination of natural background conditions, as well as abandoned mines in the sub-watershed. Further monitoring is needed in order to determine natural background levels.
Low pH	<6.5 SU A&We, PBC	03/05/2004 – 6.1 SU	Inconclusive – Did not meet standards in 1 of 4 samples. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
pH	Missing most core parameters	Insufficient sampling events	Lab detection limits for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Medium Priority – Collect pH measurements due to the low pH value. Collect missing core parameters to represent at least 3 seasons during an assessment period. Use lower detection limits for selenium and dissolved mercury.	

FISH CREEK From headwaters to Black River 15060101 – 032 13.8 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Inconclusive FC – Attaining AgI -- Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/25/2001 – 08/14/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Black River SRFIS000.01 101200	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, zinc 3 total and 0-1 dissolved: Boron, lead, manganese, mercury 1 total and 1 dissolved: barium, nickel, silver, and thallium	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	2 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient *E. coli* bacteria samples		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority – Collect *E. coli* bacteria samples to represent at least 3 seasons during the assessment period. Use lower lab detection limits for selenium and dissolved mercury.	

FIVE POINT MOUNTAIN TRIBUTARY From headwaters to Pinto Creek 15060103 – 885 2.9 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&We – Impaired PBC – Inconclusive	Category 5 Impaired	Copper	Add copper to 303(d) List. (see discussion below)

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 03/30/2001 – 01/04/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At 60W3 ** SRFPM002.24 102657	ADEQ TMDL	6 total and dissolved: Copper 5 total and dissolved: Selenium, and zinc 1 dissolved and total metals: Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, lead, manganese, mercury, nickel, silver, thallium 6 pH	None	1 Fluoride
Below unnamed mine SRFPM001.69 102658	ADEQ TMDL			
Above Bronx Mine SRFPM000.99 102659	ADEQ TMDL			
Below Bronx Mine SRFPM000.90 102660	ADEQ TMDL			

** 60W3 was a natural background site located above any mining or other anthropogenic disturbances.

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	12.5 µg/L at 52 mg/L hardness 7.0 µg/L at 28 mg/L hardness 8.6 µg/L at 35 mg/L hardness 7.7 µg/L at 31 mg/L hardness 5.6 µg/L at 22 mg/L hardness 4.4 µg/L at 17 mg/L hardness A&We acute	03/30/2001 – 380 µg/L 02/26/2003 – 45 µg/L 03/04/2003 – 100 µg/L (02/23/2004 – 62 µg/L)* (12/29/2004 – 72 µg/L)* (01/04/2005 – 46 µg/L)*	Impaired – 3 exceedances within a 3-year period. *These exceedances occurred at the natural background site, and were not used in determining impairment.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
DISCUSSION OF EXCEEDANCES		Samples were collected to support the Pinto Creek copper TMDL and site specific copper standard development. Copper loadings from this tributary will be addressed in the Pinto Creek copper TMDL currently being developed.	
MONITORING RECOMMENDATIONS		High Priority –Collect additional samples to support TMDL development as needed. Use lower detection limits for selenium and dissolved mercury.	

GIBSON MINE TRIBUTARY From headwaters to Pinto Creek 15060103 – 887 1 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Ww – Impaired FBC – Inconclusive FC -- Inconclusive	Category 4A Not Attaining	Copper	Currently undergoing a Phase II copper TMDL.

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/22/2000 – 03/05/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Pinto Creek SRGIB000.11 101071	ADEQ TMDL	31-50 dissolved and total metals: Copper and zinc 1 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, manganese, mercury, nickel, silver, thallium	4 samples: Dissolved oxygen 17 pH	1 Fluoride 1 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	4.9 µg/L at 34 mg/L hardness 9.1 µg/L at 66 mg/L hardness 9.3 µg/L at 68 mg/L hardness 78 µg/L at 56 mg/L hardness 12.2 µg/L at 90 mg/L hardness 14.7 µg/L at 110 mg/L hardness 5.5 µg/L at 39 mg/L hardness 6.6 µg/L at 47 mg/L hardness 15.4 µg/L at 140 mg/L hardness 7.5 µg/L at 54 mg/L hardness A&Ww acute	03/05/2004 – 2,400 µg/L 08/26/2003 – 4,200 µg/L 03/04/2003 – 7,000 µg/L 02/27/2003 – 7,400 µg/L 02/15/2003 – 6,000 µg/L 03/30/2001 – 2,300 µg/L 03/08/2001 – 2,100 µg/L 02/16/2001 – 2,500 µg/L 01/12/2001 – 5,600 µg/L 10/22/2000 – 5,900 µg/L	Impaired – Exceeded standards during all 10 monitoring periods – 9 exceedances in the last 3 years of monitoring.
Low pH	<6.5 SU A&Ww, FBC	03/05/2004 – 6.0 SU 08/26/2003 – 5.7 SU 03/04/2003 – 6.2 SU 02/27/2003 – 6.0 SU 02/15/2003 – 5.7 SU 03/08/2001 – 6.4 SU 01/12/2001 – 5.9 SU 10/22/2000 – 5.4 SU	Inconclusive – Did not meet standards in 8 of 10 sampling events (13 of 17 samples). Binomial method requires a minimum of 5 exceedances and 20 samples to list as impaired. (See discussion below)

Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
pH	Missing most core parameters		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
DISCUSSION OF EXCEEDANCES		Gibson Mine tributary is heavily impacted by mining activities; however, remediation activities are currently trying to address this contamination. Copper loadings from this tributary will be addressed in the Pinto Creek copper TMDL currently being developed.	
MONITORING RECOMMENDATIONS		High Priority –Collect additional samples to support TMDL development as needed. Use lower detection limits for selenium and dissolved mercury.	

GOLD GULCH From headwaters to Pinto Creek 15060103 – 894 3.3 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIODS: 01/06/2000 – 04/03/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
North of #3 tailing impoundment SRGDG000.21 103442	BHP Permit	33 total and 3 dissolved metals: Copper, selenium, zinc 23-33 total metals only: Arsenic, beryllium, cadmium, and magnesium	21 samples: Dissolved oxygen 42 samples: pH	30 Turbidity
At weir SRGDG000.03 102666	BHP Permit			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Need dissolved lead to assess A&We.		Lab detection limit for selenium was higher than A&W chronic criteria.
DISCUSSION OF EXCEEDANCES		Samples were collected to support the Pinto Creek copper TMDL and site specific copper standard development. Copper loadings from this tributary will be addressed in the Pinto Creek copper TMDL currently being developed.	
MONITORING RECOMMENDATIONS		High Priority –Collect additional samples to support TMDL development as needed. Collect missing core parameters to represent at least 3 seasons during the assessment period. Use a lower detection limits for selenium.	

GREENBACK CREEK From headwaters to Tonto Creek 15060105 -- 005 16.4 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Attaining FC – Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 11/28/2001 – 05/08/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below Conway Ranch SRGRE009.81 101221	ADEQ Ambient	3 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, copper, zinc 3 total and 0-2 dissolved: Boron, lead, manganese, mercury	3 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Core parameters collected.		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

HAIGLER CREEK From headwaters to unnamed tributary at 341223 / 1110011 15060105 – 012A 15.4 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Attaining FBC – Attaining FC – Attaining AgI -- Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 12/18/2001 – 08/29/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Near Boy Scout Camp SRHAG009.01 100372	ADEQ Ambient	4 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 4 total metals only: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	3 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 4 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Core parameters collected.		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium.	

HANNAGAN CREEK From headwaters to Beaver Creek 15060101 -- 034 7.2 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 04/09/2002 – 03/23/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Highway 181 SRHAN002.27 102149	ADEQ Ambient		5-7 samples: Total phosphorus, dissolved oxygen, pH	7 Total dissolved solids 4 Suspended sediment concentration 4 Turbidity
Above Beaver Creek SRHAN000.06 102141	ADEQ Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	06/20/2003 – 6.2 mg/L	Attaining -- Low dissolved oxygen due to natural conditions of low flow and ground water upwelling. Flow at 0.05 cfs. Nutrient tested showed low concentration (phosphorus 0.068 mg/L).
Phosphorus	0.8 mg/L Single sample maximum A&Wc, FBC	08/27/2003 – 6.2 mg/L	Inconclusive – Only 1 exceedance in 7 samples. (Binomial) Occurred during very high flow (10.3 cfs)
Suspended sediment concentration	Geometric mean 80 mg/L A&Wc	08/27/2003 – 3,500 mg/L 03/10/2004 – 95 mg/L 03/23/2004 – 135 mg/L	Attaining – Exceeded 80 mg/L on 3 of 7 monitoring events. Two of the results were not included in the geometric mean calculation, because flows were elevated (3,500 mg/L and 135 mg/L). Using the remaining samples, the geometric mean standard was not exceeded.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
Phosphorus	Insufficient core parameters		
MONITORING RECOMMENDATIONS		Medium Priority –Collect more phosphorus and suspended sediment concentration data due to exceedances. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted, due to high levels of suspended sediment during flood flows. Collect core parameters to represent at least 3 seasons during the assessment period.	

HAUNTED CANYON From headwaters to Pinto Creek 15060103 – 879 6.8 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Inconclusive FBC – Attaining FC – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 03/23/2000 – 01/14/2005 NUMBER AND TYPES OF SAMPLES Metals	Nutrients – Related	Other
Below Powers Gulch SRHNC000.45 101131	ADEQ Ambient And TMDL	19 total and 61 dissolved: Copper 3-15 total and dissolved: Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, thallium, zinc 8 total and 0-2 dissolved: Boron, manganese, mercury	5-7 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus 10 Dissolved oxygen, 26 pH	4 *E. coli* bacteria 9 Fluoride 5 Total dissolved solids 6 Turbidity
At Carlota Weir SRHNC000.14 101072	ADEQ TMDL			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	7.6 µg/L at 55 mg/L hardness 13.2 µg/L at 98 mg/L hardness A&Ww acute	12/30/2004 – 22 µg/L 03/10/2004 – 17 µg/L	Inconclusive – ADEQ will collect further monitoring because weight-of-evidence does not support listing this reach as impaired. (See discussion below)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.

DISCUSSION OF COPPER EXCEEDANCES	The assessment is supported by the following evidence: 1. The exceedances are based on calculated hardness. Allowing for a margin of error in the analysis, the acute copper criteria on 03/10/2004 could be as high as 17 µg/L, which would not be an exceedance. 2. Both exceedances occurred at the Carlota Weir; however, all five samples collected 3/10 mile upstream (below Power Gulch) were below the lab reporting limit of 10 µg/L. A rich copper ore body is known to exist near the lower site where the exceedances occurred; therefore the exceedances may be due to natural conditions (not a violation of standards). The sample on 03/10/2004 was collected during low flow (less than 1 cfs), which further supports the proposal that it represented natural background for this site.
MONITORING RECOMMENDATIONS	Medium Priority – Collect copper data to support Phase II copper TMDL. Use lower lab detection limits for selenium and dissolved mercury.

HAY CREEK From headwaters to West Fork Black River 15060101 – 353 4.5 Miles Unique Water	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 11/15/2001-05/05/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
In Exclusion area SRHAY003.25 102121	ADEQ Special study	2 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 2 total and 0-1 dissolved: Boron, lead, manganese, mercury	2 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	1 *E. coli* bacteria 2 Fluoride 2 Total dissolved solids 8 Suspended sediment concentration 8 Turbidity
Above West Fork Black River SRHAY000.04 101299	ADEQ Ambient and Special Study			

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	Lab detection limit for selenium is higher than A&Wc chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for selenium.	

HOME CREEK From headwaters to West Fork Black River 15060101 -- 339 9.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL -- Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 04/16/2003 – 03/23/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above fish barrier SRHOM001.01 102128	ADEQ Special study		1 sample: Total phosphorus, 4 samples: Dissolved oxygen and pH	2 Total dissolved solids 6 Suspended sediment concentration 6 Turbidity
Above West Fork Black River SRHOM000.02 102129	ADEQ Special study			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period.	

HORTON CREEK From headwaters to Beaver Creek 15060101 -- 036 4.6 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 04/15/2003 – 03/23/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Forest Road #26 SRHRT002.27 102149	ADEQ Ambient		2 samples: Total phosphorus, dissolved oxygen, pH	1 Total dissolved solids 3 Suspended sediment concentration 3 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period.	

JK MOUNTAIN TRIBUTARY From headwaters to West Fork Pinto Creek 15060103 – 873 1.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 03/05/2004; 01/04/2005		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above West Fork Pinto Creek SRJKM000.22 102668	ADEQ TMDL	2 dissolved and total metals: Copper, selenium, zinc 2 pH		

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	9.1 µg/L at 37 mg/L hardness 13.9 µg/L at 58 mg/L hardness A&We acute	01/04/2005 – 18 µg/L 03/05/2004 – 28 µg/L	Attaining –Field investigations for the Pinto Creek TMDL have concluded that copper loads are entirely due to natural background conditions. Exceedances entirely due to natural background are not violations of copper criteria and are not used to list a surface water as impaired. This data was used to develop a site-specific standard for Pinto Creek.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameter	Insufficient sampling events	Lab detection limit for selenium was higher than A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during an assessment period. Use lower detection limits for selenium.	

MEAD CANYON From headwaters to Pinto Creek 15060103 – 889 2.4 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATES: 03/05/2004; 12/30/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below MF Ranch SRMEC001.13 102655	ADEQ TMDL	2 dissolved and total metals: Copper and zinc 2 pH		
At Forest Road #349 SRMEC000.53 102656	ADEQ TMDL			

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	14.2 µg/L at 59 mg/L hardness 9.3 µg/L at 38 mg/L hardness A&We acute	03/05/2004 – 22 µg/L 12/30/2004 – 67 µg/L	Attaining –Field investigations for the Pinto Creek TMDL have concluded that copper loads are entirely due to natural background conditions. Exceedances entirely due to natural background are not violations of copper criteria and are not used to list a surface water as impaired. This data was used to develop a site-specific standard for Pinto Creek.
Low pH	>6.5 SU A&We, PBC	03/05/2004 – 5.3 SU	Inconclusive – Did not meet standards in 1 of 2 sampling events. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
pH	Insufficient core parameters	Insufficient sampling events	Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Medium Priority –Collect pH samples due to the low pH value. Collect core parameters to represent at least 3 seasons during an assessment period. Use a lower detection limit for selenium.	

NORTH FORK BEAR WALLOW CREEK From headwaters to Bear Wallow Creek 15060101 – 022 5.2 Miles Unique Water	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATES: 11/14/2001; 06/11/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Just above South Fork Bear Wallow Creek SRNBE000.10 101262	ADEQ Ambient	2 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, lead, manganese, mercury, zinc 2 total and 0-1 dissolved: Boron, lead, manganese, mercury	2 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	2 *E. coli* bacteria 2 Fluoride 2 Total dissolved solids 2 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameter	Insufficient sampling events	Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for the selenium.	

PINAL CREEK From Lower Pinal Creek WTP discharge to Salt River 15060103 – 280D 6.4 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Inconclusive FBC – Attaining FC – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 02/16/2000 – 04/28/2005		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Setka Ranch SRPNL006.87 101491	USGS Pinal Group Effectiveness	93-173 total and dissolved metals: Beryllium, cadmium, chromium, copper, manganese, nickel, zinc 25-60 total and dissolved metals: Antimony, arsenic, barium, boron, lead, thallium, 17-25 total and dissolved: Selenium, silver 25 total and 4 dissolved: Mercury	22 samples: Ammonia, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen 109 Dissolved oxygen 273 pH	22 *E. coli* bacteria 11 Fluoride 8 Total dissolved solids 22 Suspended sediment concentration 22 Turbidity
At site Z2.2 SRPNL006.70 101503	USGS Special study			
At site Z4 SRPNL006.62 101504	USGS Special study			
At site Z4.3 SRPNL006.54 101505	USGS Special study			
At site Z4.7 SRPNL006.49 101507	USGS Special study			
At site Z5 SRPNL006.41 101509	USGS Special study			
At site Z5.7 SRPNL006.24 101510	USGS Special study			
At site Z6.2 SRPNL006.17 101511	USGS Special study			
At site Z7 SRPNL005.96 101513	USGS Special study			
At USGS site SRPNL005.82 101515	USGS Special study			
At size Z9A SRPNL005.65 101516	USGS Special study			
At site Z10SW SRPNL005.51 102171	USGS Special study			
At site JJ15 SRPNL005.12 101518	USGS Pinal Group Effectiveness			
At Inspiration Dam SRPNL003.79 100727	USGS Pinal Group Effectiveness			

EXCEEDANCES			
POLLUTANT	**STANDARD UNIT DESIGNATED USES**	**DATES EXCEEDANCES**	**DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS**
Excluded metals exceedances and low pH values before treatment initiated in 2001			
Cadmium (dissolved)	6.22 µg/L at >400 mg/L hardness A&Ww chronic	07/14/2004 – 7.0 µg/L	Inconclusive – One exceedance the assessment period. Occurred during normal flow.
Chromium	100 µg/L FBC	12/08/2004 – 140	Attaining – Only 1 exceedance in 70 samples (Binomial)
Dissolved oxygen	6.0 mg/L A&Ww	06/13/2000 – 4.7 mg/L 08/20/2000 – 5.5 mg/L 10/17/2000 – 5.5 mg/L 01/25/2001 – 4.8 mg/L 04/05/2001 – 1.7 mg/L 06/12/2001 – 5.5 mg/L 08/07/2001 – 3.8 mg/L 01/16/2002 – 5.4 mg/L 05/27/2003 – 4.0 mg/L 05/18/2004 – 5.4 mg/L	Attaining -- Low dissolved oxygen due to natural conditions of ground water upwelling in the area.
pH	>6.5 SU A&Ww, FBC, AgL	05/27/2003 – 6.4 SU	Attaining – Surface water treatment in 2001. Only 1 low pH in 63 monitoring events. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
Dissolved cadmium	**Collected all core parameters**		Lab detection limits for dissolved metals (beryllium, cadmium, chromium, copper, mercury, nickel, silver, and zinc) and selenium were higher than A&W criteria in at least 6 samples.
MONITORING RECOMMENDATIONS		Medium Priority –Collect additional dissolved cadmium and dissolved zinc samples due to exceedances. Use lower lab detection limits for dissolved metals and total selenium.	

PINTO CREEK From headwaters to unnamed tributary at 331927 / 1105456 15060103 – 018A 2.5 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Ww – Impaired FBC – Inconclusive FC – Inconclusive AgI – Inconclusive AgL – Inconclusive	Category 4A Not Attaining	Copper	Currently undergoing a Phase II copper TMDL.

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 02/16/2001 – 03/05/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At Simpson Dam SRPNT033.02 102428	ADEQ Ambient	7 dissolved and 6 total copper 2 total and 3 dissolved zinc 7 pH	2 samples: Dissolved oxygen and pH	

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper	500 µg/L AgL	08/26/2003 – 1300 µg/L 03/05/2004 – 1000 µg/L	Remains impaired – 2 exceedances in 6 samples.
Copper (dissolved)	5.7 µg/L at 40 mg/L hardness 16.0 µg/L at 120 mg/L hardness A&Ww acute	02/27/2003 – 16 µg/L 03/05/2004 – 18 µg/L	Remains impaired – 2 exceedances in the last 3 years of monitoring
pH	>6.5 µg/L A&Ww, FBC, AgL	08/26/2003 – 5.9 µg/L 03/05/2004 – 5.7 µg/L	Inconclusive – Only 2 exceedances in 6 sampling events. (Binomial method requires a minimum of 5 exceedances and 20 samples to assess as impaired.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
pH	Insufficient core parameters		Lab detection limit for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		High Priority –Collect copper samples to support development of the Phase II copper TMDL and site specific copper standards. Collect additional pH samples due to exceedances. Use a lower lab detection limit for selenium.	

PINTO CREEK From unnamed tributary at 331927 / 1105456 to West Fork Pinto Creek 15060103 – 018B 15.3 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Ww – Impaired FBC – Attaining FC – Attaining AgI – Attaining AgL – Attaining	Category 4A Not Attaining	Copper	Currently undergoing a Phase II copper TMDL.

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 02/16/2000 – 04/28/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Henderson Ranch Mines SRPNT032.25 101039	ADEQ TMDL	96 total and 80 dissolved: Copper 58 total and 38 dissolved: Zinc 33 total and 8 dissolved: Arsenic, beryllium, cadmium, manganese. 26 total metals only: Selenium 8-9 dissolved and total metals: Antimony, barium, boron, chromium, lead, nickel, silver, thallium 8 total metals only: Mercury 112 pH		9 Fluoride 7 Turbidity
At Henderson Ranch Mines SRPNT031.89 102429	ADEQ TMDL			
Below Henderson Ranch Mines SRPNT031.74 101061	ADEQ TMDL			
Above Gibson Mine tributary SRPNT028.85 101062	ADEQ TMDL			
At old Highway 60 SRPNT027.51 101064	ADEQ TMDL			
Above Cottonwood Gulch and below Cactus Breccia SRPNT024.85 103311	ADEQ TMDL And BHP Effectiveness			
Above Carlotta Cactus Breccia SRPNT024.04 102430	ADEQ TMDL And BHP Effectiveness			
Below Carlotta Cactus Breccia SRPNT023.29 102431	ADEQ TMDL			
Below Haunted Canyon USGS # 09498501 SRPNT020.12 101068	ADEQ TMDL			
Below USGS gage SRPNT019.77 102432	ADEQ TMDL			
Below Iron Bridge SRPNT019.23 103313	BHP Effectiveness			

EXCEEDANCES			
POLLUTANT	**STANDARD UNIT DESIGNATED USES**	**DATES EXCEEDANCES**	**DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS**
Copper	500 µg/L – AgL 1300 µg/L -- FBC	10/23/2000 – 810 µg/L 02/25/2003 – 1172 µg/L 08/26/2003 – 1600 µg/L 03/05/2004 – 1700 µg/L 12/29/2004 – 1600 µg/L	Remains impaired – 3-5 exceedances in 28 sampling events (3-6 of 96 samples). (Binomial method requires a minimum of 10 samples with no exceedances.)
Copper (dissolved)	Varies by hardness between 2.7 to 49.6 µg/L) A&Ww acute	10/23/2000 – 920 µg/L 01/13/2001 – 150 µg/L 02/16/2001 – 210 µg/L 03/06/2001 – 260 µg/L 03/30/2001 – 81 µg/L 02/13/2003 – 530 µg/L 02/25/2003 – 820 µg/L 03/04/2003 – 480 µg/L 03/17/2003 – 340 µg/L 04/21/2003 – 70 µg/L 08/26/2003 – 230 µg/L 02/23/2004 – 93 µg/L 03/05/2004 – 450 µg/L 12/29/2004 – 83 µg/L 01/04/2005 – 77 µg/L	Remains impaired – 15 exceedances in 15 sampling events.
pH	<6.5 SU A&Ww FBC AgL	10/23/2000 – 5.6 SU 02/15/2003 – 5.7 SU 08/26/2003 – 5.9 SU 03/05/2004 – 5.7 SU	Attaining– Only 4 exceedances in 28 sampling events (Binomial method requires a minimum of 6 exceedances in 28 samples.)
Selenium	2.0 µg/L A&Ww chronic	04/22/2003 – 3 µg/L 02/03/2004 – 3 µg/L* 10/18/2004 – 3 µg/L*	Inconclusive – 1 exceedances during the assessment period. *Exceedances may be due to groundwater upwelling.
Zinc (dissolved)	232 µg/L at 224 mg/L hardness 379.3 µg/L at >400 µg/L hardness	10/23/2000 – 390 µg/L 08/26/2003 – 5,100 µg/L	Inconclusive – 2 exceedances; however, exceedances occurred more than 3 years apart. (A minimum of 2 exceedances in a 3-year period are required to determine impairment.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
Selenium, dissolved zinc	Insufficient *E. coli* bacteria, total nitrogen, and total phosphorus to assess FBC and A&Ww		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		High Priority –Collect copper samples to support development of the Phase II copper TMDL and site specific copper standards. Collect additional selenium and dissolved zinc samples due to exceedances. Use lower lab detection limits for selenium and dissolved mercury. The old turbidity criterion (50 NTU) was exceeded in 7 of 39 samples. Collect suspended sediment concentration (SSC) samples. Also, recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted.	

PINTO CREEK From West Fork Pinto Creek to Roosevelt Lake 15060103 – 018C 17.8 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Ww – Impaired FBC – Impaired FC – Attaining AgI – Attaining AgL – Impaired	Category 5 (Selenium) Impaired Category 4A (Copper) Not Attaining	Copper, selenium	Added selenium in 2004. Currently undergoing a Phase II copper TMDL.

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 01/31/2000 – 01/11/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Pinto Valley Weir SRPNT014.93 102436	ADEQ TMDL	31 total and 35 dissolved: Copper 26 total and 25 dissolved: Zinc 22-23 total and dissolved: Antimony, arsenic, beryllium, cadmium, chromium, lead manganese. 9-10 dissolved and total metals: Barium, nickel, silver, thallium 22-23 total and 0-2 dissolved: Boron, manganese, 22 total 4 dissolved: Mercury 1-2 total and dissolved: Selenium	20-21 samples: Ammonia, nitrate-nitrite, total nitrogen, total phosphorus. 24 samples: Dissolved oxygen 33 samples: pH	19 *E. coli* bacteria 23 Fluoride 20 Total dissolved solids 10 Suspended sediment concentration 21 Turbidity
At Pinto Valley Weir USGS #09498502 SRPNT014.51 101070	ADEQ TMDL			
Above Henderson Ford SRPNT008.48 100346	ADEQ TMDL			
At State Route 188 SRPNT004.37 102437	ADEQ TMDL			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Cadmium	50 µg/L for AgI, AgL 84 µg/L for FC	04/27/2004 – 200 µg/L	Attaining – 1 exceedance in 23 samples. (Binomial)
Copper (dissolved)	20.9 µg/L at 160 mg/L hardness 22.2 µg/L at 170 mg/L hardness A&Ww acute	03/05/2004 – 27 µg/L 01/05/2005 – 32 µg/L	Remains impaired – 2 exceedances in the last 3 years of monitoring. (Chronic criteria also exceeded in 4 samples.)
Dissolved oxygen	6.0 mg/L A&Ww	08/31/2004 – 3.9 mg/L	Attaining – Low dissolved oxygen due to natural conditions of low flow (0.05 cfs) and ground water upwelling. Nutrients are low (nitrogen 0.28 mg/L and phosphorus 0.024 mg/L)
Selenium	2.0 µg/L A&Ww chronic	01/31/2000 – 7.6 µg/L 01/19/2001 – 9.0 µg/L	Remains Impaired – 2 exceedances during the assessment period. Due to the lab reporting limit for selenium, 16 other samples could not be used to determine attainment (see note below)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Collected all core parameters		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		High Priority –Collect copper and selenium samples to support development of TMDLs and site specific copper standards. Use lower lab detection limits for selenium and dissolved mercury.	

POWERS GULCH From headwaters to Haunted Canyon 15060103 – 884 3.8 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 04/17/2002 – 04/28/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Near Haunted Canyon SRPWG000.15 102665	BHP Ambient ADEQ TMDL	8-9 dissolved and total metals: Copper, selenium, and zinc 8 total metals only: Arsenic, beryllium, cadmium, manganese, pH 9		8 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	9.8 µg/L at 40 mg/L hardness A&We acute	03/10/2004 – 21 µg/L	Inconclusive – Only 1 exceedance in the last 3 years of monitoring.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
Copper	Insufficient core parameters to assess designated uses		Lab detection limit for selenium was higher than A&W chronic criteria.
DISCUSSION OF EXCEEDANCES		Samples were collected to support the Pinto Creek copper TMDL and site specific copper standard development. Copper loadings from this tributary will be addressed in the Pinto Creek copper TMDL currently being developed.	
MONITORING RECOMMENDATIONS		High Priority –Collect additional samples to support TMDL development as needed. Use lower detection limits for selenium. Collect core parameters to represent at least 3 seasons during an assessment period.	

ROOSEVELT LAKE 15060103 – 1240 18,350 Acres	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Inconclusive FBC – Inconclusive FC – Attaining DWS – Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 01/31/2000 – 01/11/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
A dam SRROO-A 100075	UA and AGFD Ambient	9-25 total and 3-6 dissolved: Arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc 9-25 total and 0-2 dissolved: Antimony, beryllium, boron, manganese, selenium, thallium	68-90 samples: Ammonia, nitrate-nitrite, total nitrogen, dissolved oxygen, pH 18 samples: Total phosphorus.	3 *E. coli* bacteria 24 Fluoride 61 Total dissolved solids 21 Turbidity
At Salt River Inlet SRROO-B 10076	UA and AGFD Ambient			
At Tonto Creek Inlet SRROO-C 100077	UA and AGFD Ambient			
Mid lake SRROO-E 100079	UA and AGFD Ambient			
At Marina SRROO-MAR 101711	UA Ambient			
At Windy Hill SRROO-WIND 102557	AGFD Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper	500 µg/L AgL	10/08/2002 – 715 µg/L	Attaining – 1 exceedance in 27 samples. (Binomial)
Dissolved oxygen	6.0 mg/L A&Ww	10/08/2004 – 4.5 mg/L	Attaining – One low dissolved oxygen out of 75 samples. (Binomial)
Lead	15 µg/L DWS and FBC	07/19/2002 – 35 µg/L	Attaining – 1 exceedance in 24 samples. (Binomial)
Manganese	980 µg/L DWS	07/19/2002 – 1680 µg/L 12/17/2003 – 1120 µg/L	Attaining – Only 2 exceedances in 30 samples. (Binomial)
pH	<9.0 SU A&Ww, FBC, AgI, AgL, DWS	03/06/2003 – 9.3 SU 09/30/2004 – 10.4 SU	Attaining – only 2 exceedances in 79 samples. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Need composite nitrogen and phosphorus samples to assess A&Wc and FBC as attaining uses (see comment below)		
DISCUSSION OF SITE SPECIFIC NUTRIENT STANDARDS		Nitrogen and phosphorus standards established for this lake require composite samples collected at the surface, 2 meter, and 5 meter depths. No composite samples were collected and analyzed during this assessment period. This standard is to be replaced by the proposed lake narrative nutrient implementation procedures currently being adopted through the Triennial Review process. The nitrogen criterion (1.0 mg/L) was exceeded in 12 of 89 samples collected in the top meter. At site B, 1.0 mg/L was exceeded in 6 of 23 samples (which is normally impaired). However, since these were not composite samples, the standard did not apply.	
MONITORING RECOMMENDATIONS		Medium Priority –New methods for implementing the narrative nutrient standard should be applied to this lake once adopted.	

RYE CREEK From headwaters to Tonto Creek 15060105 -- 014 17.8 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Inconclusive FC – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 01/09/2002 – 09/04/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Rye Arizona SRRYE007.56 102832	AGFD Ambient	4 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 4 total metals only: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	2 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 4 Turbidity
Below Rye Arizona SRRYE006.15 102833	AGFD Ambient			
Above Bridge SRFYE001.27 101297	ADEQ Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	6.0 mg/L A&Ww	04/18/2002 – 5.79 mg/L 09/04/2002 – 2.72 mg/L	Attaining – Low dissolved oxygen due to natural conditions related to low flow and ground water upwelling. Flow 0.3 – 0.5 cfs. Low nutrients (nitrogen 0.2 to 0.03 mg/L; phosphorus 0.01to 0.03 mg/L).

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	E. coli bacteria needed to assess FBC		Lab detection limits for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use a lower lab detection limit for selenium. Collect missing core parameters to represent at least 3 seasons during an assessment period.	

SAGUARO LAKE 15060106A -- 1290 1025 Acres	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Attaining DWS -- Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/30/2000 – 11/05/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At dam SRSAG-A 100082	ADEQ, AGFD, UA Ambient	6-16 total and 5 dissolved: Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, and zinc 15 total metals only: Mercury 4 total metals only: Thallium	40-44 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	16 *E. coli* bacteria 25 Fluoride 14 Total dissolved solids 19 Turbidity
Southeast of Bagley Flat SRSAG-B 101810	UA, AGFD Ambient			
Near Perrigrin Cove SRSAG-2 102559	AGFD Ambient			
At Bagley Flat SRSAG-BAG 101001	AGFD Ambient			
At Butcher Jones SRSAG-BJ 100081	ADEQ, UA Ambient			
At campground SRSAG-MFLAT 101698	AGFD, UA Ambient			
Marina site 1 SRSAG-MAR1 100994	ADEQ, UA Ambient			
Marina site 2 SRSAG-MAR2 100995	ADEQ, AGFD Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	06/27/2001 – 6.0 mg/L – MFLAT 08/06/2001 – 2.2 mg/L – 1 & B 10/15/2001 – 6.1 mg/L – 1 06/04/2003 – 6.6 mg/L – B 08/20/2004 – 6.4 mg/L – A	Inconclusive – Low dissolved oxygen in the top meter at least at one site during 5 of 19 sampling events (7-day periods). Low dissolved oxygen in 6 of 42 samples in the top meter. (Binomial method requires a minimum of 5 exceedances and 20 samples. At 42 samples, impairment occurs at 8 exceedances.)
Fluorine	4000 µg/L DWS	01/18/2001 – 15,800 µg/L	Attaining – Only 1 exceedance in 25 samples. (Binomial) Data reliability is questionable because result was several levels of magnitude higher than other values reported.
pH (high)	<9.0 SU	06/27/2001 – 9.6 SU 05/03/2002 – 9.4 SU	Attaining – pH exceeded standards in 2 of 19 sampling events (2 of 42 samples). (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
Dissolved oxygen	Need composite nitrogen and phosphorus samples to assess A&Wc and FBC		Lab detection limit for dissolved mercury was higher than the A&W chronic criteria.
DISCUSSION OF SITE SPECIFIC NUTRIENT STANDARDS		Nitrogen and phosphorus standards established for this lake require composite samples collected at the surface, 2 meter, and 5 meter depths. No composite samples were collected and analyzed during this assessment period. This standard is to be replaced by the proposed lake narrative nutrient implementation procedures currently being adopted through the Triennial Review process. The nitrogen criterion (1.0 mg/L) was exceeded in 8 of 43 samples collected in the top meter, but since these were not composite samples, the standard did not apply.	
MONITORING RECOMMENDATIONS		Medium Priority –Collect more dissolved oxygen samples due to exceedances. Low dissolved oxygen and high pH may be symptoms of excess nutrient loading. New methods for implementing the narrative nutrient standard should be applied to this lake once adopted, to determine whether narrative nutrient violations are occurring. Use a lower lab detection limit for dissolved mercury.	

SALT RIVER From Pinal Creek to Roosevelt Dam 15060103 -- 004 7.5 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Ww – Impaired FBC – Attaining FC – Attaining AgI – Attaining AgL – Attaining	Category 5 Impaired	Suspended sediment concentration	Add Suspended sediment concentration (SSC)

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 02/16/2000 – 08/31/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Lake Roosevelt USGS #09498500 SRSLR107.43 100745	USGS Ambient	27-28 dissolved and total metals: Antimony, arsenic, barium, boron, beryllium, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc	22-28 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	23 *E. coli* bacteria 28 Total dissolved solids 28 Suspended sediment concentration 27 Turbidity 13 Cyanide

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Arsenic	50 µg/L FBC	08/05/2002 – 87.7 µg/L 07/22/2003 – 70 µg/L 08/01/2003 – 91 µg/L	Attaining – Only 3 of 28 samples exceeded criterion. (Binomial) Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the five samples taken in 2004, as arsenic averaged 6.8 µg/L.
Chromium	100 µg/L FBC	08/07/2002 – 101.3 µg/L 06/03/2003 – 134 µg/L 07/22/2003 – 170 µg/L 08/01/2003 – 218 µg/L	Attaining – Only 4 of 28 samples exceeded criterion. (Binomial) Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the five samples taken in 2004, as chromium averaged 2 µg/L.
Cyanide	41 µg/L – A&Ww acute 10 µg/L – A&Ww chronic	08/07/2002 – 120 µg/L 07/22/2003 – 30 µg/L 08/01/2003 – 30 µg/L	Inconclusive –Chronic exceedances occurred during elevated flows and may not indicate conditions during a 4-day period. Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the last 5 samples collected, as cyanide was below the lab detection limit (<10 µg/L).
Dissolved oxygen	6.0 mg/L A&Ww	07/16/2002 – 0.9 µg/L 08/06/2002 – 0.1 µg/L 06/03/2003 – 5.7 µg/L 07/22/2003 – 2.8 µg/L 08/01/2003 – 4.0 µg/L	Inconclusive – 5 of 28 samples showed low DO. (Binomial) Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown as all 5 samples taken in 2004 met standards (averaged 8.8 mg/L).
E. coli bacteria	235 CFU/100 ml	07/17/2002 – >2,700 CFU/100 ml 06/03/2003 – 2000 CFU/100 ml 07/22/2003 – 3000 CFU/100 ml 08/01/2003 – 19,000 CFU/100 ml	Inconclusive –4 exceedances in the past 3 years of monitoring. All appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the five samples taken in 2004, *E. coli* bacteria results ranged from 2.0 to 200 CFU/100 ml.

Lead	15 µg/L – FBC 100 µg/L – AgL	07/16/2002 – 131 µg/L 08/05/2002 – 529.7 µg/L 06/03/2003 – 313 µg/L 07/22/2003 – 300 µg/L 08/01/2003 – 414 µg/L	Inconclusive – 5 exceedances in 28 samples. (Binomial) Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in 5 samples collected in 2004, as Lead averaged 3.8 µg/L.
Manganese	10,000 µg/L – AgI 19,699 µg/L -- FBC AgI	08/05/2002 – 29,733 µg/L 06/03/2003 – 11,000 µg/L 07/22/2003 – 18,100 µg/L	Attaining – 3 of 28 samples exceeded the 10,000 and only 1 exceeded the 19,699. (Binomial) Exceedances appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the five samples taken in 2004, as manganese averaged 98 µg/L.
Selenium	2 µg/L A&Ww chronic	08/07/2002 – 2.7 µg/L 07/17/2003 – 3 µg/L 07/22/2003 – 8 µg/L 08/01/2003 – 9 µg/L	Inconclusive – Four exceedances in the assessment period; however, all appear related to the Rodeo-Chediski Wildfire in 2002. Fire recovery shown in the last 4 samples in 2004, as selenium was below the criterion.
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Wc	04/18/2001 – 176 mg/L – 1700 cfs* 09/05/2001 – 307 mg/L – 206 cfs 06/12/2002 – 101 mg/L – 75 cfs 07/16/2002 – 5366 mg/L – 624 cfs* 08/05/2002 – 22,850 mg/L – 2030 cfs* 08/19/2002 – 632 mg/L – 172 cfs 06/03/2003 – 15,300 mg/L – 325 cfs 07/22/2003 – 42,500 mg/L – 1120 cfs* 08/01/2003 – 25,800 mg/L – 627 cfs* 03/31/2004 – 273 mg/L – 1010 cfs* 04/21/2004 – 331 mg/L – 804 cfs* 08/31/2004 – 492 mg/L – 130 cfs	Impaired – SSC criterion of 80 mg/L was exceeded in 12 of 28 sampling events. Seven of the exceedances (*) were not included in the geometric mean calculation, because flows were above the 50th percentile of flow. Using the remaining 21 samples, the geometric mean of a minimum of 4 consecutive samples exceeded 80 mg/L four times. Some of the exceedances were due to the fire in 2002; however, high levels of sediment transport were indicated in 2001 before the fire also. (Note that the old turbidity standard (50 NTU) was also exceeded in 10 of 27 field turbidity samples.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
Cyanide, dissolved oxygen, lead, selenium, and *E. coli* bacteria	**Core parameters collected.**		Lab detection limit for dissolved mercury was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		High Priority –Collect sediment samples to support development of an SSC TMDL. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted. Collect additional cyanide, dissolved oxygen, lead, selenium, and *E. coli* bacteria samples due to exceedances. Use a lower lab detection limit for dissolved mercury.	

SALT RIVER From Stewart Mountain Dam (Saguaro Lake) to Verde River 15060106A -- 003 10.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	A&Wc – Impaired FBC – Inconclusive FC – Attaining DWS -- Attaining AgI – Attaining AgL – Attaining	Category 5 Impaired	Low dissolved oxygen	Low dissolved oxygen and copper were added to 303(d) List in 2004. Delist copper (see discussion below)

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 02/01/2000 – 09/02/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Tubing site --Saguaro Lake Ranch SLSLR054.49 103271	USFS Bacteria only	21-22 dissolved and total metals: Antimony, arsenic, barium, boron, beryllium, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, thallium, and zinc 22 total metals only: Mercury	22-23 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	22 *E. coli* bacteria 1 Fluoride (22 dissolved) 22 Total dissolved solids 22 Suspended sediment concentration 21 Turbidity
Below Steward Mountain Dam USGS #09502000 Tubing Bus Stop 2 SRSLR051.32 100746	USGS Ambient			
Tubing Bus Stop 4 SLSLR047.21 103272	USFS Bacteria only			
Phon D Sutton Picnic Site SLSLR044.95 103273	USFS Bacteria only			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	07/27/2000 – 5.9 mg/L 07/25/2001 – 5.5 mg/L 10/03/2001 – 6.0 mg/L 05/10/2002 – 6.5 mg/L 08/29/2002 – 6.5 mg/L 04/04/2003 – 5.1 mg/L 06/27/2003 – 5.5 mg/L 08/08/2003 – 4.5 mg/L 04/26/2004 – 6.4 mg/L 05/06/2003 – 6.3 mg/L	Remains impaired – Did not meet standards in 10 of 23 samples. Low flow (4.2-5.8 cfs) associated with only two measurements. Elevated nitrogen (at 1.24 mg/L) in only 1 sample. (Binomial) (Note: ADEQ has proposed changing the designated use at this lake to A&Ww, which has a dissolved oxygen standard of 6.0 mg/L. This would adjust the number of low dissolved oxygen samples to 5 of 23 samples. It would remain impaired.)
E. coli bacteria	235 CFU/100 ml	08/15/2001 – 300 CFU/100 ml 06/13/2002 – 240 CFU/100 ml	Inconclusive – Exceedances do not exceed the assessment screening value of 300 CFU/100 ml; therefore, ADEQ will do further monitoring before listing the reach as impaired. (See assessment methods concerning this screening value.)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Core parameters collected.		Lab detection limit for dissolved mercury was higher than the A&W chronic criteria.
DISSOLVED COPPER		Delisting copper. In 22 total and 22 dissolved samples, copper did not exceed a surface water quality standard.	
MONITORING RECOMMENDATIONS		High Priority –Collect dissolved oxygen samples to support development of TMDL. Collect additional *E. coli* samples due to the exceedances. Use a lower lab detection limit for dissolved mercury.	

SNAKE RIVER From headwaters to Black River 15060101 – 045 6.2 Miles Unique Water	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATES: 11/15/2001; 06/12/2002 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
1.3 miles above Black River SRSNK001.33 101298	ADEQ Ambient	2 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, mercury, zinc 2 total and 0-1 dissolved: Boron, lead, manganese, mercury	2 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	2 *E. coli* bacteria 2 Fluoride 2 Total dissolved solids 2 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters to assess any designated uses.	Insufficient sampling events (only 2)	Lab detection limits for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for the selenium.	

SOUTH FORK BEAR WALLOW CREEK From headwaters to Bear Wallow Creek 15060101 -- 258 3.8 Miles Unique Water	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 11/14/2001; 06/11/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above pack trail crossing SRSBE000.13 101261	ADEQ Ambient	2 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 2 total and 0-1 dissolved: Boron, lead, manganese, mercury	2 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	2 *E. coli* bacteria 2 Fluoride 2 Total dissolved solids 2 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	Lab detection limit for selenium was higher than A&Wc chronic standards.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for selenium.	

SPRING CREEK From headwaters to Tonto Creek 15060105 -- 010 20.5 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Inconclusive FC – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 12/19/2001 – 09/05/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
West of Young, AZ SRSPI011.54 100380	ADEQ Ambient	3-4 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 3 total and 0-2 dissolved: Boron, lead, manganese, mercury	4 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	2 *E. coli* bacteria 3 Fluoride 3 Total dissolved solids 3 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient *E. coli* bacteria to assess FBC.		Lab detection limits for selenium was higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for selenium.	

STINKY CREEK From headwaters to Fort Apache Reservation 15060101 – 352A 2.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATES: 11/15/2001; 06/10/2002		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above West Fork Black River SRST1000.38 101303	ADEQ Ambient	2 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 2 total and 0-1 dissolved: Boron, lead, manganese, mercury	2 samples: Ammonia, dissolved oxygen, pH, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen	1 *E. coli* bacteria 2 Fluoride 2 Total dissolved solids 2 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	06/10/2002 – 5.5 mg/L	Attaining -- Low dissolved oxygen due to natural conditions of low flow and ground water upwelling. Flow 0.46 cfs. Low nutrients (nitrogen 0.4 mg/L, phosphorus 0.06 mg/L)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	Lab detection limit for selenium is higher than A&Wc chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period. Use a lower lab detection limit for selenium.	

THOMAS CREEK From headwaters to Beaver Creek 15060101 -- 285 4.1 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 04/16/2003 – 03/23/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
East Weir #1 SRTHO002.92 102148	ADEQ Special study		2 samples: Total phosphorus, dissolved oxygen, pH	1 Total dissolved solids 3 Suspended sediment concentration 3 Turbidity
East Weir #2 SRTHO002.86 102147	ADEQ Special study			
Above Beaver Creek SRTHO000.05 102138	ADEQ Special study			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Dissolved oxygen	7.0 mg/L A&Wc	06/20/2003 – 5.6 mg/L	Attaining -- Low dissolved oxygen due to natural conditions caused by low flow (0.01 cfs) and ground water upwelling. Low nutrients (0.07 mg/L total phosphorus at time)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period.	

TONTO CREEK From headwaters to unnamed tributary at 341810 / 1110414 15060105 – 013A 8.1 Miles		USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	ADEQ	A&Wc – Impaired FBC – Impaired FC – Attaining AgI – Attaining AgL – Attaining	Category 4A (*E. coli*) Not attaining (Impaired) Category 5 (phosphorus and low dissolved oxygen) Impaired	*E. coli* bacteria, and phosphorus	Add phosphorus and low dissolved oxygen. *E. coli* and TMDL approved in 2005. Implementing strategies to reduce loadings.
	EPA	A&Wc – Impaired FBC – Impaired	Category 4A (nitrogen) Not attaining (Impaired) Category 5 (Low dissolved oxygen)	Nitrogen and low dissolved oxygen	EPA listed nitrogen and low dissolved oxygen in 2004. Nitrogen TMDL approved in 2005. Implementing strategies to reduce loadings

Light blue highlights indicate EPA impairments based on EPA assessment and listing criteria. This listing may change when EPA reviews and approves the 2006/2008 impaired waters list. Such listings do not satisfy requirements established in ADEQ's Impaired Water Identification Rule; therefore, they are not included in the list of ADEQ's Impaired waters (Appendix B and Appendix C).

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 05/23/2000 – 10/23/2003 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
At headwater spring SRTON062.89 101016	ADEQ TMDL	5-26 total and dissolved metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, manganese, mercury, silver, thallium, and zinc 25-26 Total metals only: Boron, manganese	156-166 samples: Total nitrogen, total phosphorus, total Kjeldahl nitrogen, dissolved oxygen, pH 26 samples: Ammonia	103 *E. coli* bacteria 26 Fluoride 23 Total dissolved solids 124 Suspended sediment concentration 167 Turbidity
Below AGFD Hatchery SRTON062.40 100351	ADEQ TMDL & Ambient			
Below hatchery mixing zone SRTON062.28 101017	ADEQ TMDL			
Above Baptist Camp SRTON061.37 101018	ADEQ TMDL			
Below Baptist Camp SRTON060.50 100352	ADEQ TMDL			
Above Horton Creek and waterfall SRTON059.65 101759	ADEQ TMDL			
Above Horton Creek SRTON059.53 101020	ADEQ TMDL			
Below Horton Creek SRTON059.49 101761	ADEQ TMDL			
Further below Horton Creek SRTON059.44 101021	ADEQ TMDL			
Upstream from campground SRTON058.93 101629	ADEQ TMDL			

Above Kohl's Ranch SRTON058.63 100354	ADEQ TMDL			
Below Kohl's Ranch SRTON057.70 100929	ADEQ TMDL			
Above Christopher Creek SRTON056.59 101018	ADEQ TMDL			
Below Christopher Creek SRTON056.39 100360	ADEQ & USGS Ambient & TMDL			

EXCEEDANCES			
POLLUTANT	**STANDARD UNIT DESIGNATED USES**	**DATES EXCEEDANCES**	**DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS**
Dissolved oxygen	7.0 mg/L A&Wc	05/23/2000 – 6.0 mg/L 05/21/2002 – 6.2 mg/L 06/11/2002 – 4.9 mg/L 06/25/2002 – 6.3 mg/L 07/09/2002 – 6.5 mg/L 07/22/2002 – 6.5 mg/L 07/08/2003 – 6.0 mg/L 07/21/2003 – 6.3 mg/L 08/18/2003 – 6.3 mg/L 10/22/2003 – 6.1 mg/L	Remains impaired – 10 of 166 samples measured low dissolved oxygen. Ground water upwelling may be the primary cause; however, nutrient loading may also contribute to low dissolved oxygen.
E. coli bacteria	235 CFU/100 ml FBC	09/03/2000 – 659 CFU/100 ml 07/23/2003 – 613 CFU/100 ml 07/30/2003 – >2419 CFU/100 ml 08/06/2003 – 260 CFU/100 ml 08/12/2003 – 520 CFU/100 ml 08/20/2003 -- >2419 CFU/100 ml	Remains impaired – 6 exceedances during the assessment period.
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Wc	07/23/2002 – 166 mg/L 07/23/2003 – 202 mg/L 07/30/2003 – 232 mg/L 08/20/2003 – 561 mg/L	Attaining – 4 samples exceeded the 80 mg/L criterion; however, the geometric mean was <u>not</u> exceeded. Note that the old turbidity standard (10 NTU) was also exceeded during 18 sampling events.
Nitrogen	0.5 mg/L – annual mean A&Wc and FBC	2002 – 0.635 mg/L	Inconclusive – The annual mean was exceeded at one site in 2002.
Phosphorus	0.1 mg/L – annual mean A&Wc and FBC	2000 – 0.21 mg/L annual mean 2003 -- 0.14 mg/L annual mean	Impaired – The annual mean was exceeded at one site in 2000 and at a different site in 2003. (Binomial)

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
	Collected all core parameters		Lab detection limits for selenium and dissolved metals (copper, lead, mercury) were higher than A&Wc chronic criteria.
DISCUSSION OF NITROGEN IMPAIRMENT		Evidence of potential nutrient impairment: 1. The nitrogen TMDL was completed and approved by EPA in 2005; 2. The annual mean was exceeded at one site in 2002; and 3. Monitoring was conducted in 2000-2004.	
MONITORING RECOMMENDATIONS		Medium Priority –Collect additional nutrient and *E. coli* bacteria data to determine effectiveness of TMDL strategies being implemented. Actions to reduce nitrogen and *E. coli* bacteria loadings will also reduce phosphorus loadings; therefore, development of a phosphorus TMDL is a low priority. Use lower lab detection limits for selenium and dissolved metals. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted.	

TONTO CREEK From tributary at 341810 / 1110414 to Haigler Creek 15060105 – 013B 8.5 Miles		USE SUPPORT	OVERALL ASSESSMENT	POLLUTANTS CAUSING IMPAIRMENT	IMPAIRMENT STATUS
	ADEQ	A&Ww – Inconclusive FBC – Impaired FC – Attaining AgI – Attaining AgL – Attaining	Category 4A Not attaining (Impaired)	*E. coli* bacteria	*E. coli* TMDL approved in 2005. Implementing strategies to reduce loadings.
	EPA	A&Wc – Impaired FBC – Impaired	Category 4A Not attaining	Nitrogen	EPA listed nitrogen in 2004. Nitrogen TMDL approved in 2005. Implementing strategies to reduce loadings

Light blue highlights indicate EPA impairments based on EPA assessment and listing criteria. This listing may change when EPA reviews and approves the 2006/2008 impaired waters list. Such listings do not satisfy requirements established in ADEQ's Impaired Water Identification Rule; therefore, they are not included in the list of ADEQ's Impaired waters (Appendix B and Appendix C).

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 05/23/2000 – 10/23/2003 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Bear Flats SRTON055.09 100357	ADEQ TMDL	4 total and dissolved metals: Antimony, arsenic, beryllium, cadmium, chromium, copper, zinc 4 total and 0-2 dissolved: Boron, lead, manganese, mercury	32-35 samples: Total nitrogen, total phosphorus, total Kjeldahl nitrogen, dissolved oxygen, pH 4 samples: Ammonia	23 *E. coli* bacteria 4 Fluoride 4 Total dissolved solids 24 Suspended sediment concentration 34 Turbidity
Below Bear Flats SRTON053.87 100358	ADEQ TMDL & Ambient			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
E. coli bacteria	235 CFU/100 ml FBC	09/02/2000 – 524.7 CFU/100 ml 10/31/2000 – 272 CFU/100 ml 07/23/2003 – >2419 CFU/100 ml 08/07/2003 – 299 CFU/100 ml 08/20/2003 -- >2419 CFU/100 ml	Remains impaired – 5 exceedances during the assessment period.
Nitrogen	0.5 mg/L – annual mean 2.0 mg/L – single sample maximum A&Ww and FBC	07/23/2002 – 2.08 mg/L (SSM) 2002 – 0.59 mg/L (annual mean)	Inconclusive – The annual mean was exceeded at one site in 2002. The single sample maximum was exceeded once in 35 samples (17 sampling events). (Binomial)
Phosphorus	0.1 mg/L – annual mean 0.8 mg/L – single sample maximum A&Ww and FBC	08/20/2003 – 1.5 mg/L 2003 – 0.57 mg/L (annual mean)	Inconclusive – The annual mean was exceeded at one site in 2003. (Another site was at the standard 0.101 mg/L in 2002.)
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Ww	07/23/2002 – 734 mg/L 08/20/2003 – 1117 mg/L	Attaining – 2 samples exceeded the 80 mg/L criterion; however, both exceedances occurred during elevated flows so the values were not included in the geometric mean calculation.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	**MISSING CORE PARAMETERS**	**MISSING SEASONAL DISTRIBUTION**	**DETECTION LIMITS NOT LOW ENOUGH**
Phosphorus	**Collected all core parameters**		Lab detection limit for selenium was higher than A&Wc chronic criteria.
DISCUSSION OF NITROGEN IMPAIRMENT		Evidence of potential nutrient impairment: 1. The nitrogen TMDL was completed and approved by EPA in 2005; 2. The annual mean was exceeded at one site in 2002; and 3. Monitoring was conducted in 2000-2004.	
MONITORING RECOMMENDATIONS		Medium Priority –Collect additional nutrient and *E. coli* bacteria data to determine effectiveness of TMDL strategies being implemented. Collect samples during critical conditions. Use a lower lab detection limit for selenium. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted.	

TONTO CREEK From Rye Creek to Gun Creek 15060105 -- 008 4.7 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Ww – Attaining FBC – Attaining FC – Attaining AgI -- Attaining AgL – Attaining	Category 1 Attaining all uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 01/31/2000 – 12/01/2005 NUMBER AND TYPES OF SAMPLES Metals	Nutrients – Related	Other
Above Gun Creek and USGS gage SRTON019.37 100349	ADEQ Ambient	7-20 dissolved and total metals: Antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, silver, thallium, and zinc 20 total and 0-2 dissolved: Boron, manganese	20-21 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	20 *E. coli* bacteria 20 Fluoride 20 Total dissolved solids 10 Suspended sediment concentration 21 Turbidity

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Core parameters collected.		Lab detection limit for dissolved mercury and selenium were higher than the A&W chronic criteria in at least 11 samples.
MONITORING RECOMMENDATIONS		Low Priority –Use lower lab detection limits for selenium and dissolved mercury.	

WEST FORK BLACK RIVER From Indian Reservation boundary to Black River 15060101 -- 048 14.6 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Attaining FC – Attaining DWS – Attaining AgI – Attaining AgL – Attaining	Category 2 Attaining some uses	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING DATE: 10/24/2000 – 01/26/2004 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Thompson Creek SRWFB015.22 100692	ADEQ Special study	8 dissolved and total metals: Antimony, arsenic, beryllium, cadmium, copper, zinc 8 total and 0-1 dissolved: Boron, lead, manganese, mercury 2 total and 1 dissolved: Barium, nickel, silver, and thallium	8 samples: Ammonia, total nitrogen, nitrite/nitrate, total Kjeldahl nitrogen, total phosphorus, dissolved oxygen, pH	7 *E. coli* bacteria 8 Fluoride 7 Total dissolved solids 69 Suspended sediment concentration 95 Turbidity
Above Forest Road #116 SRWFB013.89 102120	ADEQ Special study			
Below Forest Road #116 SRWFB013.67 101204	ADEQ Ambient and Special study			
At Forest Road #88 SRWFB003.45 102126	ADEQ Special study			
Above Home Creek SRWFB001.47 102130	ADEQ Special study			
At Buffalo Crossing SRWFB001.13 100376	ADEQ Ambient and Special study			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Suspended sediment concentration (SSC)	Geometric mean 80 mg/L A&Wc	03/24/2004 – 122.8 mg/L	Attaining – SSC criteria of 80 mg/L was exceeded once in 40 sampling events. The geometric mean standard was not exceeded.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Core parameters collected.		Lab detection limits for selenium and dissolved mercury were higher than the A&W chronic criteria.
MONITORING RECOMMENDATIONS		Low Priority –Use lower lab detection limits for selenium and dissolved mercury. The old turbidity standard (10 NTU) was exceeded in 10 of 40 sampling events. Recommend using biocriteria assessments and bottom deposits implementation procedures in this reach, when they are adopted.	

WEST FORK PINTO CREEK From headwaters to Pinto Creek 15060103 – 066 11.6 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&We – Inconclusive PBC – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT

SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 03/30/2001 – 01/04/2005 NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Below Kennedy Ranch SRWPN004.47 102433	ADEQ TMDL	4-5 dissolved and total: Copper, selenium, and zinc 1 dissolved and total metals: Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, lead, manganese, mercury, nickel, silver, thallium. 7 pH	1 samples: Ammonia, total nitrogen, total phosphorus, nitrite/nitrate, total Kjeldahl nitrogen 2 Dissolved oxygen 7 pH	1 Fluoride
At WF SRWPN000.39 102434	ADEQ TMDL			
At Pinto Creek SRWPN000.01 102435	ADEQ TMDL			

EXCEEDANCES

POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
Copper (dissolved)	7.8 µg/L at 78 mg/L hardness A&We acute	01/04/2005 – 78 µg/L	Inconclusive – 1 exceedance in the last 3 years of monitoring.

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS

EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	
DISCUSSION OF EXCEEDANCES		Samples were collected to support the Pinto Creek copper TMDL and site specific copper standard development. Copper loadings from this tributary will be addressed in the Pinto Creek copper TMDL currently being developed.	
MONITORING RECOMMENDATIONS		High Priority –Collect additional samples to support TMDL development as needed. Collect core parameters to represent at least 3 seasons during the assessment period. Use lower detection limits for selenium and dissolved mercury.	

WILLOW CREEK From headwaters to Beaver Creek 15060101 -- 049 7.0 Miles	USE SUPPORT	OVERALL ASSESSMENT	
	A&Wc – Inconclusive FBC – Inconclusive FC – Inconclusive AgL – Inconclusive	Category 3 Inconclusive	

MONITORING USED IN THIS ASSESSMENT				
SITE NAMES ID # DATABASE #	AGENCY PURPOSE	SAMPLING PERIOD: 04/15/2003 – 03/23/2004		
		NUMBER AND TYPES OF SAMPLES		
		Metals	Nutrients – Related	Other
Above Forest Road #26 SRW1L001.73 102146	ADEQ Special Study		2 samples: Total phosphorus, dissolved oxygen, pH	1 Total dissolved solids 3 Suspended sediment concentration 3 Turbidity

EXCEEDANCES			
POLLUTANT	STANDARD UNIT DESIGNATED USES	DATES EXCEEDANCES	DESIGNATED USE SUPPORT SUPPORTING EVIDENCE AND COMMENTS
No Exceedances			

Pollutant: Assume "total" concentration, unless shown as dissolved.
Frequency Exceed = Samples collected within a 7-day period are aggregated and counted as one sample per site.

DATA GAPS AND MONITORING NEEDS			
EXCEEDANCES NEEDING MORE SAMPLES TO ASSESS	MISSING CORE PARAMETERS	MISSING SEASONAL DISTRIBUTION	DETECTION LIMITS NOT LOW ENOUGH
	Insufficient core parameters	Insufficient sampling events	
MONITORING RECOMMENDATIONS		Low Priority –Collect core parameters to represent at least 3 seasons during the assessment period.	